

# WORKING DRAFT

## **APPENDIX E—DECONTAMINATION EQUIPMENT DATA SHEETS**

# WORKING DRAFT

## DECONTAMINATION EQUIPMENT

### General

Equipment Name

ID# 1

#### *Skin Decontaminant Lotion*



Decontamination Process

Chemical (neutralizes contaminant)

Applications

Personnel

Equipment

Infrastructure

Yes

Yes

No

Application Notes

The Skin Decontaminant Lotion is used to decontaminate, on contact, skin and personal equipment. The lotion, manufactured in Canada by Anachemia, is currently in production. It employs chemical (oxidation) technology and is effective against chemical agents, such as mustard (H), nerve agents, and Lewisite (L). The lotion is supplied in a sealed barrier material pouch, under a layer of inert gas. Each pouch contains a towelette impregnated with 45 mL of lotion. The pouches are supplied in sets of four and can be opened while wearing gloves. Towelettes are wiped over the contaminated area and then wiped off using another towelette. The lotion should only be used on the skin and should not come in contact with the eyes.

Availability

Commercially available

Current User

Not specified

Manufacturer

Anachemia Canada Inc.  
P.O. Box 147  
Lachine (Quebec), Canada H8S 4A7  
514-489-5711 (Tel)  
514-363-5281 (Fax)

Source

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

### Operational Parameters

CW Agents Decontaminated

G agents, VX, HD, L

BW Agents Decontaminated

Not specified

High Hazard TIMs

Decontaminated

Not specified

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<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Not specified
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	6 L 6 W x 1.92 H (in)
<b>Weight</b>	Not specified
<b>Power Requirements</b>	None

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant packets
<b>Maintenance Repairs Required</b>	None
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	14 °F to 122 °F (operating temperature)
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	One person
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Minimal
<b>Operator Training Required</b>	Minimal
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	None
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

***K1-05 Standard Unit***

**ID# 2**



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

Yes

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The K1-05, manufactured commercially in the U.S. by Applied Surface Technologies, is designed to clean sensitive equipment. The K1-05 employs mechanical technology (high-pressure carbon dioxide), which uses carbon dioxide to remove micron and sub-micron particles from surfaces at high efficiencies and also removes hydrocarbon-based contamination. The CO2 snow cleaning is nondestructive and nonabrasive. The K1-05 unit addresses both the general and critical cleaning problems. The unit comes with either a 5 ft or 10 ft flexible stainless steel PTFE lined hose, a CGA320 cylindrical fitting, an on/off gun, an optional 0.5  $\mu$  stainless steel filter, a 0 psi to 2000 psi pressure gauge, and two nozzles. One nozzle is an FEP polymer, the other nozzle is stainless steel, and both have 16 mm diameter orifices. A brass nozzle can also be substituted for the stainless steel nozzle. A 24 V dc or a 120 V ac solenoid control valve can be supplied in place of the on/off gun. The standard units can also be equipped with the narrow 1/16 in outer diameter by using either a 0.010, 0.020, or 0.030 thousandth of an inch inner diameter tube.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Applied Surface Technologies  
15 Hawthorne Drive  
New Providence, NJ 07974  
908-464-6675 (Tel)  
908-464-7475 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified

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<b>-High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Carbon dioxide
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified
<b><u>Physical Parameters</u></b>	Not specified
<b>Size</b>	Not specified
<b>Weight</b>	Not specified
<b>Power Requirements</b>	24 V dc or 120 V ac
<b><u>Logistical Parameters</u></b>	Not specified
<b>Consumables Required</b>	Decontaminant, filter
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	The decontamination process leaves no residue on the surface of the item nor does it produce any chemical waste.
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified
<b><u>Special Requirements</u></b>	Not specified
<b>Operator Skills Requirements</b>	Not specified
<b>Operator Training Requirements</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

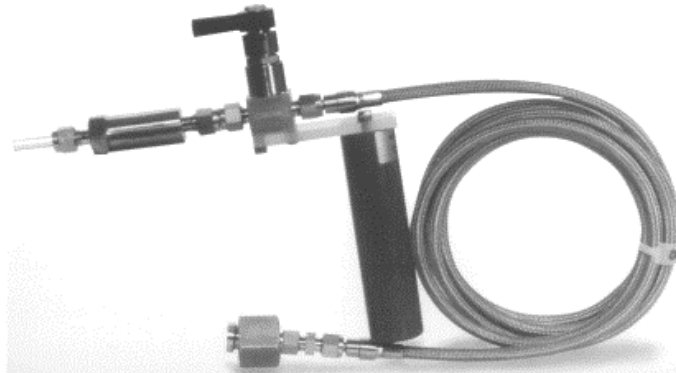
# WORKING DRAFT

## General

**Equipment Name**

**ID# 3**

***K4-05 High Purity***



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The K4-05 high purity unit is also designed to clean sensitive equipment. This system employs mechanical technology (high-pressure carbon dioxide), which uses carbon dioxide to remove micron and sub-micron particles from surfaces at high efficiencies and also removes hydrocarbon-based contamination. The carbon dioxide snow cleaning is nondestructive and nonabrasive. The process leaves no residue on the surface of the item nor does it produce any chemical waste. The K4-05 unit addresses both the general and critical cleaning problems. These units come with either a 5 ft or 10 ft flexible stainless steel PTFE lined hose, a CGA320 cylindrical fitting, two nozzles, and a 0.01  $\mu$  filter. All fittings for this unit are compression fittings as opposed to NPT fittings. An electro-polished 24 V dc or 120 V ac solenoid valve (with compression fittings) can be substituted for the 90° on/off valve.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Applied Surface Technologies  
15 Hawthorne Drive  
New Providence, NJ 07974  
908-464-6675 (Tel)  
908-464-7475 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

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<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Cleaning solution
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	Not specified
<b>Weight</b>	Not specified
<b>Power Requirements</b>	None

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	The decontamination process leaves no residue on the surface of the item nor does it produce any chemical waste.
<b>Resources</b>	One person
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Minimal
<b>Operator Training Required</b>	Minimal
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	None
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

**ID# 4**

*Snow Motion*



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The Snow Motion is a fully automated carbon dioxide snow cleaning workstation used to clean sensitive and interior equipment. It is commercially available in the U.S. Snow Motion is used to clean laser filters, visible lenses, mirrors, wire bond pads, ceramics, metals, and wafers. Contamination is lifted off the surface and partially absorbed into the carbon dioxide stream. The Snow Motion, if used for decontamination, would only remove the contamination. An additional procedure would be necessary to neutralize the agent. The station features four axis motion (x, y, z rotary) with a user friendly programming interface. Cleaning procedures can be saved as programs, which can be saved, recalled, and later edited with a keyboard and display interface located on front panel. The nozzle is made of stainless steel, which produces a near sonic stream of carbon dioxide with a coaxial flow of nitrogen to reduce moisture. Moisture will inhibit the cleaning process. The system is also equipped with inline gas filters, which are fitted just prior to the nozzles.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Applied Surface Technologies  
15 Hawthorne Drive  
New Providence, NJ 07974  
908-464-6675 (Tel)  
908-464-7475 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified



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<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Cleaning solution
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	Not specified
<b>Weight</b>	Not specified
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Not specified
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	68 °F to 86 °F (operating temperature)
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

***Decontamination Glove Booths***

**ID# 5**

Picture Not Available

### **Decontamination Process**

Physical (removes contaminant)

### **Applications**

**Personnel**

**Equipment**

**Infrastructure**

No

Yes

No

### **Application Notes**

Container Products Corporation manufactures a series of commercially available high-pressure decontamination booths. The decontamination units are designed for the decontamination of hand tools and other large heavy items. The booths employ mechanical technology, and they disperse high-pressure water sprays over contaminated equipment. The booths are made from stainless steel and are equipped with a chemical solution injection system.

### **Availability**

Commercially available

### **Current User**

Not specified

### **Manufacturer**

Container Products Corporation  
P.O. Box 2767  
Wilmington, NC 28406  
910-392-6100 (Tel)  
910-392-6778 (Fax)  
email: cpc@c-p-c.com

### **Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

### **CW Agents Decontaminated**

Not specified

### **BW Agents Decontaminated**

Not specified

### **High Hazard TIMs Decontaminated**

Not specified

### **Medium Hazard TIMs Decontaminated**

Not specified

### **Low Hazard TIMs Decontaminated**

Not specified

### **Decontaminant Solutions**

Not specified

### **Capacity/Throughput**

Not specified

### **Set-up Time**

Not specified

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## **Physical Parameters**

<b>Size</b>	Not specified
<b>Weight</b>	Not specified
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Not specified
<b>Durability</b>	Constructed of stainless steel
<b>Environmental Conditions</b>	Water supply can be heated to a temperature range of 100 °F to 300 °F.
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

**ID# 6**

*HAL Series*



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The HAL Series is used to clean hospital instruments completely before they are subjected to disinfection and sterilization. The HAL Series is available commercially in the U.S. and is manufactured by Crest Ultrasonics. The consoles are available in 11 gal, 15 gal, and 20 gal sizes. The systems are easily operated with a push of one button. The systems can be used in conjunction with cleaning solutions in order to obtain optimal cleaning efficiencies.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Crest Ultrasonics  
Scotch Road  
P.O. Box 7266  
Trenton, NJ 08628  
609-883-4000 (Tel)  
609-883-6452 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

G, VX, D

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

**Low Hazard TIMs**

Not specified

**Decontaminated**

**Decontaminant Solutions**

Fuller's Earth

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**Capacity/Throughput** Not specified

**Set-up Time** Not specified

## **Physical Parameters**

**Size** Not specified

**Weight** Not specified

**Power Requirements** Not specified

## **Logistical Parameters**

**Consumables Required** Decontaminant

**Maintenance Repairs Required** Not specified

**Shelf Life** Not specified

**Transportability** Not specified

**Durability** Not specified

**Environmental Conditions** 110 °F to 140 °F (operating temperature)

**Environmental Considerations** Not specified

**Resources** Not specified

**Unit Cost** Not specified

**Maintenance Cost** Not specified

**Warranty** Not specified

## **Special Requirements**

**Operator Skills Required** Not specified

**Operator Training Required** Not specified

**Training Available** Not specified

**Manuals Available** Not specified

**Support Equipment** Not specified

**Testing Information** Information not available

**Applicable Regulations** Not specified

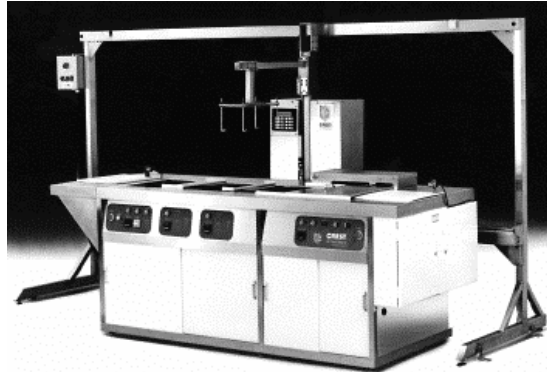
# WORKING DRAFT

## General

**Equipment Name**

**ID# 7**

*The Optimum Console*



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The Optimum Console is a versatile precision cleaning system. It is commercially available in the U.S. and is manufactured by Crest Ultrasonics. The system employs mechanical technology (ultrasonic) and is available in aqueous or semi-aqueous process versions. The system is made from rugged, stainless steel and is available in 3, 4, or 5 stage wash station designs. Stand tank sizes range from 10 L x 14 W x 10 D to 24 L x 36 W x 20 D (in) deep. The three-station Optimum Console is a wash-rinse-dry system designed for most general cleaning applications. The four-station wash-rinse-rinse-dry system is ideal for precision cleaning applications at the microscopic level. The five-station wash-wash-rinse-rinse-dry is configured for semi-aqueous cleaning applications. The Ultrasonic Wash provides high intensity heated ultrasonic wash. Filtered recirculation with overflow aids in removing oil and particulate contaminants. The wash is followed by a Heated Ultrasonic Rinse, which provides a two-stage reverse flow cascade rinse with spray-over immersion, conserving space and water usage. The last stage, the High Efficiency Recirculating Hot Air Dryer, quickly dries parts using compressed air.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Crest Ultrasonics  
Scotch Road  
P.O. Box 7266  
Trenton, NJ 08628  
609-883-4000 (Tel)  
609-883-6452 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

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## Operational Parameters

<b>CW Agents Decontaminated</b>	Not specified
<b>BW Agents Decontaminated</b>	Not specified
<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Ambergard XE-555 Resin
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## Physical Parameters

<b>Size</b>	Variety
<b>Weight</b>	Variety
<b>Power Requirements</b>	Not specified

## Logistical Parameters

<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Not specified
<b>Durability</b>	The system is constructed from rugged stainless steel.
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## Special Requirements

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

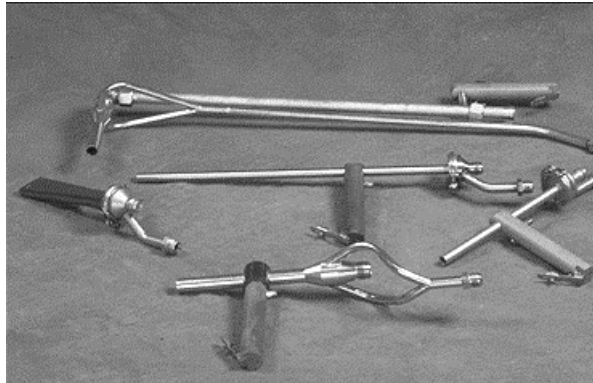
# WORKING DRAFT

## General

**Equipment Name**

**ID# 8**

### *Ice Gun*



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The Ice Gun is designed to decontaminate sensitive and interior equipment. The Ice Gun is commercially available in the U.S. and is manufactured by Cryogenesis. The gun employs mechanical technology (high-pressure carbon dioxide) with controlled air speed allowing the dry ice to be accelerated to subsonic or supersonic speeds (in excess of 1300 ft/s). The gun's operating range is between 40 psi and 350 psi and is able to be elevated 50 ft to 60 ft. The ice pellets range from 100  $\mu$  to  $\frac{1}{4}$  in diameter.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Cryogenesis  
2140-T Scranton Rd.  
Cleveland, OH 44113  
216-696-8797 (Tel)  
216-696-8794 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

None

**BW Agents Decontaminated**

None

**High Hazard TIMs**

None

**Decontaminated**

**Medium Hazard TIMs**

None

**Decontaminated**

**Low Hazard TIMs**

None

**Decontaminated**

**Decontaminant Solutions**

None

**Capacity/Throughput**

Not specified



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**Set-up Time** Not specified

## **Physical Parameters**

**Size** 18 W x 26 L x 46 H (in)

**Weight** 200 lb

**Power Requirements** None - all pneumatic

## **Logistical Parameters**

**Consumables Required** Compressed air @ 80 psi and 170 SCFM  
100 lb/h to 200 lb/h of dry ice

**Maintenance Repairs Required** Very low maintenance

**Shelf Life** Not specified

**Transportability** Very portable

**Durability** To last 10 yr

**Environmental Conditions** Not specified

**Environmental Considerations** Operates at 108 dB

**Resources** Not specified

**Unit Cost** \$13.1K to \$19K

**Maintenance Cost** \$500/yr

**Warranty** 1 yr

## **Special Requirements**

**Operator Skills Required** High school

**Operator Training Required** 1 h to 2 h

**Training Available** Yes

**Manuals Available** Yes

**Support Equipment** Compressor and dry ice

**Testing Information** Yes, available from manufacturer

**Applicable Regulations** Not specified

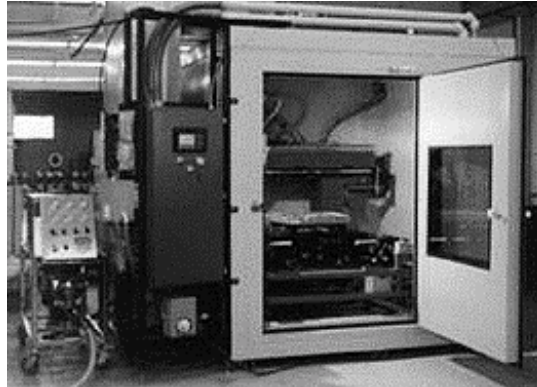
# WORKING DRAFT

## General

**Equipment Name**

**ID# 9**

### *Cryogenesis Booth*



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The Cryogenesis Booth is a fully automated cleaning system that is commercially available in the U.S. The system employs mechanical technology (high-pressure carbon dioxide) to clean equipment. The booth is equipped with an “x-y” translation and rotation table coupled with a stationary ice gun. Contaminated equipment is placed inside the booth on a table that rotates the equipment around as the ice gun disperses ice pellets to clean the equipment. Contaminated equipment is cleaned in one step. The cleaning system is housed in a soundproof booth.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Cryogenesis  
2140-T Scranton Rd.  
Cleveland, OH 44113  
216-696-8797 (Tel)  
216-696-8794 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

GB, VX, HD

**BW Agents Decontaminated**

All

**High Hazard TIMs  
Decontaminated**

Not specified

**Medium Hazard TIMs  
Decontaminated**

Not specified

**Low Hazard TIMs  
Decontaminated**

Not specified

# WORKING DRAFT

## **Decontaminant Solutions**

Dry Ice

## **Capacity/Throughput**

100 lb/h to 200 lb/h dry ice

## **Set-up Time**

30 min

## **Physical Parameters**

### **Size**

18 W x 26 L x 46 H (in)

### **Weight**

200 lb

### **Power Requirements**

None - all pneumatic

## **Logistical Parameters**

### **Consumables Required**

Compressed air @ 80 psi and 170 SCFM  
100 lb/h to 200 lb/h of dry ice

### **Maintenance Repairs Required**

Very low maintenance

### **Shelf Life**

Not specified

### **Transportability**

Very portable

### **Durability**

To last 10 yr

### **Environmental Conditions**

Not specified

### **Environmental Considerations**

Operates at 108 dB

### **Resources**

Not specified

### **Unit Cost**

\$13.1K to \$19K

### **Maintenance Cost**

\$500/yr

### **Warranty**

1 yr

## **Special Requirements**

### **Operator Skills Required**

High school

### **Operator Training Required**

1 h to 2 h

### **Training Available**

Yes

### **Manuals Available**

Yes

### **Support Equipment**

Compressor and dry ice

### **Testing Information**

Yes, available from manufacturer

### **Applicable Regulations**

Not specified

# WORKING DRAFT

## General

**Equipment Name**

*Delta V-1 Dry Ice Surface Cleaning System*

**ID# 10**



**Decontamination Process**

Physical (removes contaminant) or Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

No

Yes

No

**Application Notes**

The Delta V-1 Dry Ice Surface Cleaning System employs mechanical technology and is designed as an environmentally safe alternative to the many surface cleaning methods currently available. The system is commercially available in the United States and is manufactured by Cryokinetics. The Delta V-1 is a portable, easy to operate system requiring no electrical power. This system employs small particles of dry ice in conjunction with high air pressure as the primary cleaning method. The dry ice particles convert from a solid to a gas upon impacting the surface being cleaned. This system is a nonwaste generating unit. Rice, plastic beads, glass beads, etc., can be used for more aggressive surface preparation requirements.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Cryokinetics  
P.O. Box 782183  
Wichita, KS 67278  
316-681-0080 (Tel)  
316-681-0330 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

GB, VX, HD

**BW Agents Decontaminated**

All

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

# WORKING DRAFT

<b>Low Hazard TIMs</b>	Not specified
<b>Decontaminated</b>	
<b>Decontaminant Solutions</b>	Water Sodium Hydroxide DS2
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	1.33 L x 12 W x 2 H (ft)
<b>Weight</b>	85 lb
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Not specified
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

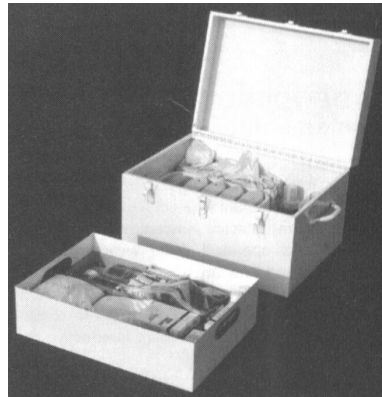
# WORKING DRAFT

## General

**Equipment Name**

***NBC-DEWDECON-PERS Emergency Response Personnel  
Decontamination Kit***

**ID# 11**



**Decontamination Process**

Physical (removes contaminant) or Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

No

No

**Application Notes**

The NBC-DEWDECON-PERS Emergency Response Personnel Decontamination Kit is a portable system for the decontamination of skin and personal equipment. Depending on decontaminants used in the kit, either chemical or mechanical technologies may be employed. This system contains equipment and supplies for the immediate decontamination of personnel by civilian firefighters, police, and ambulance crews. The kit was designed to be carried in a vehicle cab or cargo area and can be ready for use within seconds. Items necessary for the decontamination of nerve and blister agents are included in this decontamination kit. Illustrated instructions are included with the kit and all components are clearly labeled for quick identification.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

DEW Engineering and Development Ltd.  
3429 Hawthorne Road  
Ottawa, Ontario Canada K1G 4G2  
613-736-5100 (Tel)  
613-736-1348 (Fax)  
email: tdear@dew.ca

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

G agents, V agents, HD

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

# WORKING DRAFT

<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Not specified
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Within seconds

## **Physical Parameters**

<b>Size</b>	1.37 W x 1.18 D x 1.83 H (ft)
<b>Weight</b>	50.6 lb
<b>Power Requirements</b>	None

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	None
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Portable decontamination unit
<b>Durability</b>	Designed to be used in harsh environments.
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	One person
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Minimal
<b>Operator Training Required</b>	Minimal
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

***NBC-DEWDECON-M Decontaminant Mixer/Applicator***

**ID# 12**



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The NBC-DEWDECON-M Decontaminant Mixer/Applicator is a portable system used to generate calcium hypochlorite based emulsion for decontamination of exterior equipment. This system has been approved for service with the Canadian armed forces. The NBC-DEWDECON-M employs chemical technology (microemulsion) and was developed to provide a noncorrosive and stable means of effectively decontaminating ships, aircrafts, vehicles, and equipment. The C8-C emulsion produced by the mixer neutralizes chemical agents such as TGD, HD, and VX. The emulsion is effective for 24 h to 72 h, depending on ambient temperature. A toluene-based perchloroethylene solvent replacement is also available. The mixer can be set up in 10 min by two people and will produce a continuous online calcium hypochlorite based emulsion at a rate of up to 2200 L/h. The mixer can be used as a direct applicator or to fill the DEWDECON-20L device for remote decontamination. The mixer has a built-in rinse capability and a top-mounted accessory box for storing hoses, wands, spare parts, and tools. Both diesel and petrol powered units are available.

**Availability**

Commercially available

**Current User**

In service with the Canadian armed forces

**Manufacturer**

DEW Engineering and Development Ltd.  
3429 Hawthorne Road  
Ottawa, Ontario, Canada K1G 4G2  
613-736-5100 (Tel)  
613-736-1348 (Fax)  
email: tdear@dew.ca

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)



# WORKING DRAFT

## **Operational Parameters**

<b>CW Agents Decontaminated</b>	G agents, VX, HD
<b>BW Agents Decontaminated</b>	All
<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	C8-C emulsion
<b>Capacity/Throughput</b>	Delivers 2200 L of decontaminant per hour
<b>Set-up Time</b>	10 min

## **Physical Parameters**

<b>Size</b>	4.26 L x 3.18 W x 2.91 H (ft)
<b>Weight</b>	785.4 lb
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Two people
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

**ID# 13**

***NBC-DEWDECON-2L***



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

The NBC-DEWDECON-2L decontamination device is a lightweight man-portable system designed to decontaminate exterior equipment. This system is manufactured in Canada by DEW Engineering and Development Ltd., and is currently in service in the Middle East. The NBC-DEWDECON-2L employs chemical technology and is used to disseminate DS2 decontaminating agent in a controlled spray to remove chemical warfare agents from contaminated surfaces. The DEWDECON-2L is a smaller version of the DEW 3 L unit and shares many interchangeable parts. The DEW 2 L device uses nitrogen cartridges as the primary method of pressurization, with an attached hand pump as backup. The device comes complete with a mounting bracket, spare parts, tools, and spare nitrogen cylinders. It is reusable and can be filled, pressurized, and operated while wearing full NBC protective clothing.

**Availability**

Commercially available

**Current User**

In service in the Middle East

**Manufacturer**

DEW Engineering and Development Ltd.  
3429 Hawthorne Road  
Ottawa, Ontario, Canada K1G 4G2  
613-736-5100 (Tel)  
613-736-1348 (Fax)  
email: tdear@dew.ca

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

GB, VX, HD

**BW Agents Decontaminated**

All

# WORKING DRAFT

<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	DS2
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	5.88 W x 6.24 D x 17.3 L (in)
<b>Weight</b>	8.8 lb (dry weight)
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant, nitrogen cartridges
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

***NBC-DEWDECON-3L Decontamination Device***

**ID# 14**



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

No

Yes

No

**Application Notes**

The NBC-DEWDECON-3L Decontamination Device is a lightweight, man-portable system designed to decontaminate exterior equipment. This system is currently in service with Australian, Canadian, and Saudi Arabian armed forces. The NBC DEWDECON-3L employs chemical technology to disseminate DS2 decontaminant in a controlled spray for 1 m to 3 m. This system is used to remove chemical agents from the surface of military equipment and it can be filled, charged, and operated while wearing full NBC protective clothing. The device can be pressurized using an air compressor or by hand. The NBC-DEWDECON-3L is deployed on wheeled and track vehicles, aircraft ground support equipment, and exterior bulkheads of ships. This item is supplied with a mounting bracket, pressure gauge, safety relief valve, and operator instructions in English, French, and Arabic. The DEW-3L is corrosion resistant to DS2, reusable, and adaptable to other decontaminants. All required maintenance can be performed by the operator using spare parts and tools provided with each unit. The hand pump on the DEW-3L is interchangeable with the NBC-DEWDECON-20L Decontamination Device. When stowed in its mounting bracket, the DEW-3L measures 150 mm in width, 160 mm in depth, and 635 mm in height. The dry weight of the NBC-DEWDECON-3L is 5.4 kg.

**Availability**

Commercially available

**Current User**

In service in Australia, Canada, and Saudi Arabia.

**Manufacturer**

DEW Engineering and Development Limited  
3429 Hawthorne Road  
Ottawa, Ontario, Canada K1G 4G2  
613-736-5100 (Tel)  
613-736-1348 (Fax)  
email: tdear@dew.ca

# WORKING DRAFT

## Source

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

### Operational Parameters

CW Agents Decontaminated	GB, VX, HD
BW Agents Decontaminated	All
High Hazard TIMs Decontaminated	Not specified
Medium Hazard TIMs Decontaminated	Not specified
Low Hazard TIMs Decontaminated	Not specified
Decontaminant Solutions	DS2
Capacity/Throughput	Not specified
Set-up Time	Not specified

### Physical Parameters

Size	5.88 W x 6.24 D x 25 H (in)
Weight	11.88 lb (dry weight)
Power Requirements	Not specified

### Logistical Parameters

Consumables Required	Decontaminant
Maintenance Repairs Required	Yes
Shelf Life	Not specified
Transportability	Man-Portable Decontamination Unit
Durability	Corrosion resistant to DS2, reusable, and adaptable to other decontaminants
Environmental Conditions	Not specified
Environmental Considerations	Not specified
Resources	Not specified
Unit Cost	Not specified
Maintenance Cost	Not specified
Warranty	Not specified

### Special Requirements

Operator Skills Required	Not specified
Operator Training Required	Not specified
Training Available	Not specified
Manuals Available	Not specified
Support Equipment	Air Compressor
Testing Information	Information not available
Applicable Regulations	Not specified

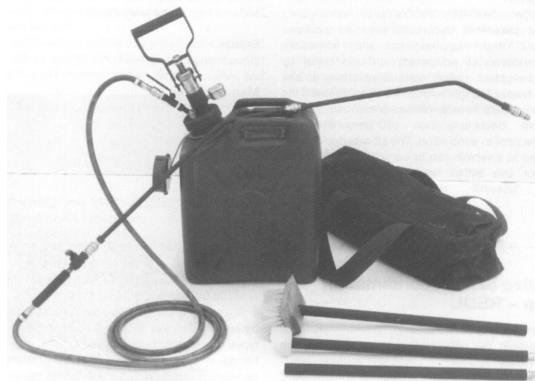
# WORKING DRAFT

## General

**Equipment Name**

***NBC-DEWDECON-20L Decontamination Device***

**ID# 15**



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**  
No

**Equipment**  
Yes

**Infrastructure**  
No

**Application Notes**

The NBC-DEWDECON-20L Decontamination Device is a man-portable decontamination system designed to decontaminate exterior equipment. The NBC-DEWDECON-20L employs chemical technology (microemulsion) to disseminate C8-C type decontaminant using a standard 5 gal (22.7 L) plastic jerrycan. The DEW-20L can be filled, pressurized, and operated wearing full NBC protective clothing. The tank capacity is 18.5 L and pressurization occurs through an external air source or the use of the integral hand pump. The integral hand pump is interchangeable with the NBC-DEWDECON-3L Decontamination Device. Any required maintenance can be performed using the spare parts and tool kit provided. Additionally, an optional DS2 conversion is also available that will enable the NBC-DEWDECON-20L to disseminate DS2. An operator with a fully charged device can decontaminate an M113 armored personnel carrier within 8 min. The DEW-20L device is filled using the NBC-DEWDECON-M emulsion mixer and the C8-C decontaminant. The C8-C decontaminant is effective for at least 72 h. The NBC-DEWDECON-20L is supplied in a rugged fabric bag that fits into any available space on a vehicle.

**Availability**

Commercially available

**Current User**

In service in Australia, Canada, and Saudi Arabia

**Manufacturer**

DEW Engineering and Development Ltd.  
3429 Hawthorne Road  
Ottawa, Ontario, Canada K1G 4G2  
613-736-5100 (Tel)  
613-736-1348 (Fax)  
email: [tdear@dew.ca](mailto:tdear@dew.ca)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

# WORKING DRAFT

## **Operational Parameters**

<b>CW Agents Decontaminated</b>	G agents, VX, HD
<b>BW Agents Decontaminated</b>	All
<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	C8-C emulsion
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	23.6 W x 7.92 D x 5.88 H (in)
<b>Weight</b>	22 lb
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	Yes
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Supplied in a rugged fabric bag
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Operations and maintenance manual
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

*M17 Lightweight Decontamination System, Sanator*

**ID# 16**

Picture Not Available

**Decontamination Process**

Physical (removes contaminant) or Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

Yes

No

**Application Notes**

The M17 Lightweight Decontamination System, Sanator is a lightweight, man-portable, and self-contained decontamination system designed to decontaminate personnel and exterior equipment. The system is under license from Karl H. Hoie & Company, Norway, and is in service with Australian, Finnish, Norwegian, Saudi Arabian, Spanish, Swedish, U.K., and U.S. armed services. The Sanator employs mechanical technology in order to decontaminate surfaces. Approximately 24 L of superheated water per minute can be dispersed at high-pressures from 1 to 2 spray wands. The system can also supply up to 80 L of water per minute to 12 showerheads for skin and personal decontamination. The system is equipped with two high-pressure spray wands, 12 shower points, a 10 m suction hose with filter, two 20 m high-pressure hoses, and a high-volume chemical decontaminant injector (to add decontaminants to the water stream). The system uses a 6000 L water tank and is powered by an 8.5 horsepower (hp) two-stroke, air-cooled engine, allowing the system the capability of suctioning water from any water source to a height of 3 m.

**Availability**

Commercially available

**Current User**

In service with the U.S. Army, Air Force, and Marine Corps

**Manufacturer**

Engineered Air Systems, Inc.  
1270 North Price Rd.  
St. Louis, MO 63132  
POC: Frank Tricomi  
314-993-5885 ext. 284 (Tel)  
314-567-4052 (Fax)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

GB, VX, HD

**BW Agents Decontaminated**

All



# WORKING DRAFT

<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Water
<b>Capacity/Throughput</b>	Approximately 24 L of superheated water (302 °F) per minute can be dispersed at high-pressures from 1 to 2 spray wands. The system can also supply up to 80 L of water per minute to 12 showerheads for skin and personal decontamination.
<b>Set-up Time</b>	Not specified
<b><u>Physical Parameters</u></b>	
<b>Size</b>	19 ft <sup>3</sup>
<b>Weight</b>	375 lb
<b>Power Requirements</b>	8.5 hp two-stroke engine
<b><u>Logistical Parameters</u></b>	
<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Man-Portable Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	The M17 can be operated by one person and in temperatures as low as -40 °F.
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	One operator
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	1 yr
<b><u>Special Requirements</u></b>	
<b>Operator Skills Required</b>	Minimal
<b>Operator Training Required</b>	Minimal training required to operate or maintain the unit. It is virtually automatic in its operation.
<b>Training Available</b>	An operator and maintainer training course has been developed and is available.
<b>Manuals Available</b>	There are extensive technical manuals and detailed maintenance manuals available complete with illustrated parts lists, spare part requirements, required tools and consumables.

# WORKING DRAFT

**Support Equipment**

Water bladders (1600 gal, 3000 gal, 10000 gal, and 20000 gal) are available depending on the customer's operational requirement

**Testing Information**

Information not available

**Applicable Regulations**

Not specified

# WORKING DRAFT

## General

Equipment Name

*DECON Powder Glove*

ID# 17

Picture Not Available

**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

No

No

**Application Notes**

Information not available

**Availability**

Commercially available

**Current User**

French army, civil defense, Singapore

**Manufacturer**

GIAT Industries  
78034 Versailles Cedex, France  
+33-1309-73991 (Tel)  
+33-1309-73967 (Fax)

North American Distributor: The CENTECH GROUP, Inc.  
4600 North Fairfax Drive, Suite 400  
Arlington, VA 22203  
800-938-1026 (Tel)  
<http://www.giat-industries.fr>

**Source**

GIAT Industries NBC Defense

## Operational Parameters

**CW Agents Decontaminated**

GB, VX, HD

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

**Low Hazard TIMs**

Not specified

**Decontaminated**

**Decontaminant Solutions**

Fuller's Earth

**Capacity/Throughput**

Not specified

**Set-up Time**

Not specified

## Physical Parameters

**Size**

8.16 x 4.68 x 0.6 (in)

# WORKING DRAFT

**Weight** 0.275 lb

**Power Requirements** None

## **Logistical Parameters**

**Consumables Required** None

**Maintenance Repairs Required** None

**Shelf Life** 10 yr

**Transportability** Man-Portable Decontamination Unit

**Durability** Not specified

**Environmental Conditions** To be used for shelter of rain or wind

**Environmental Considerations** Not specified

**Resources** One man

**Unit Cost** Not specified

**Maintenance Cost** Not specified

**Warranty** 1 yr

## **Special Requirements**

**Operator Skills Required** Hazmat technician or NBC trained personnel

**Operator Training Required** Not specified

**Training Available** Yes

**Manuals Available** User manual

**Support Equipment** None

**Testing Information** Information not available

**Applicable Regulations** Not specified

# WORKING DRAFT

## General

**Equipment Name**

***Personal Decontamination Kit***

**ID# 18**

Picture Not Available

### **Decontamination Process**

Physical (removes contaminant) and/or Chemical (neutralizes contaminant)

### **Applications**

#### **Personnel**

#### **Equipment**

#### **Infrastructure**

Yes

No

No

### **Application Notes**

Information not available

### **Availability**

Commercially available

### **Current User**

French Civil Defense Fire Brigade

### **Manufacturer**

GIAT Industries  
78034 Versailles Cedex, France  
+33-1309-73991 (Tel)  
+33-1309-73967 (Fax)

North American Distributor: The CENTECH GROUP, Inc.  
4600 North Fairfax Drive, Suite 400  
Arlington, VA 22203  
800-938-1026 (Tel)  
<http://www.giat-industries.fr>

### **Source**

GIAT Industries NBC Defense

## Operational Parameters

### **CW Agents Decontaminated**

GA, GB, GD, VX, HD, L

### **BW Agents Decontaminated**

Not specified

### **High Hazard TIMs Decontaminated**

Not specified

### **Medium Hazard TIMs Decontaminated**

Not specified

### **Low Hazard TIMs Decontaminated**

Not specified

### **Decontaminant Solutions**

Potassium Permanganate conc.: 0.05 %  
Sodium Hydrogen carbonate conc.: 1.5 %  
Sodium Hypochlorite conc.: 0.04 %

### **Capacity/Throughput**

Decontaminates 5 people

### **Set-up Time**

Not specified

# WORKING DRAFT

## **Physical Parameters**

<b>Size</b>	2.6 L x 1.5 W x 1.3 H (ft)
<b>Weight</b>	47 lb
<b>Power Requirements</b>	None

## **Logistical Parameters**

<b>Consumables Required</b>	Decontaminant
<b>Maintenance Repairs Required</b>	Maintenance on gasket every 5 yr
<b>Shelf Life</b>	9 yr for sprayer, 5 yr for decon solution
<b>Transportability</b>	Not specified
<b>Durability</b>	Rugged for emergency use
<b>Environmental Conditions</b>	Operates in common environmental conditions.
<b>Environmental Considerations</b>	Regulations not known about waste
<b>Resources</b>	One man per sprayer
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	1 yr

## **Special Requirements**

<b>Operator Skills Required</b>	Hazmat technician or NBC trained personnel
<b>Operator Training Required</b>	1 h of training is required to operate equipment
<b>Training Available</b>	Yes
<b>Manuals Available</b>	User manual
<b>Support Equipment</b>	None
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	None

# WORKING DRAFT

## General

**Equipment Name**

***SDMS Sensitive Material Decontamination System***

**ID# 19**

Picture Not Available

**Decontamination Process**

Physical (removes contaminant) and/or Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

Yes

No

**Application Notes**

Personnel equipment, sensitive equipment, interior equipment

**Availability**

Military

**Current User**

French army, German army

**Manufacturer**

GIAT Industries  
78034 Versailles Cedex, France  
+33-1309-73991 (Tel)  
+33-1309-73967 (Fax)

North American Distributor: The CENTECH GROUP, Inc.  
4600 North Fairfax Drive, Suite 400  
Arlington, VA 22203  
800-938-1026 (Tel)  
<http://www.giat-industries.fr>

**Source**

GIAT Industries NBC Division

## Operational Parameters

**CW Agents Decontaminated**

GA, GD, VX, HD

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

**Low Hazard TIMs**

Not specified

**Decontaminated**

**Decontaminant Solutions**

Noncorrosive solution (IGA 02 / IGA 07). other decon solutions may be used.

**Capacity/Throughput**

54 small guns, 54 helmets, 54 masks/h

**Set-up Time**

Not specified

# WORKING DRAFT

## **Physical Parameters**

<b>Size</b>	Shelter is 20 ft
<b>Weight</b>	Less than or equal to 10 T
<b>Power Requirements</b>	Autonomy: 75 KWA-ac available 400 V:dc

## **Logistical Parameters**

<b>Consumables Required</b>	Decon solution, Gas-oil, batteries, water
<b>Maintenance Repairs Required</b>	Prototype under evaluation
<b>Shelf Life</b>	20 yr
<b>Transportability</b>	Sea/air transportation
<b>Durability</b>	Mil Spec
<b>Environmental Conditions</b>	Functioning by day and night of -32 °C to +49 °C with restriction from -5 °C
<b>Environmental Considerations</b>	Effluents are recovered
<b>Resources</b>	3 man (1 specialist trained with this system)
<b>Unit Cost</b>	On request
<b>Maintenance Cost</b>	Prototype under evaluation
<b>Warranty</b>	1 yr

## **Special Requirements**

<b>Operator Skills Required</b>	User manual and training manual
<b>Operator Training Required</b>	4 d
<b>Training Available</b>	On request
<b>Manuals Available</b>	User manual and maintenance manual
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	French Ministry of Defense BW-Allemagne
<b>Applicable Regulations</b>	Export license



# WORKING DRAFT

## General

**Equipment Name**

***Thorough Decontamination System***

**ID# 20**

Picture Not Available

**Decontamination Process**

Physical (removes contaminant) and/or Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

No

Yes

No

**Application Notes**

Information not available

**Availability**

Commercially available

**Current User**

French army forces

**Manufacturer**

GIAT Industries  
78034 Versailles Cedex, France  
+33-1309-73991 (Tel)  
+33-1309-73967 (Fax)

North American Distributor: The CENTECH GROUP, Inc.  
4600 North Fairfax Drive, Suite 400  
Arlington, VA 22203  
800-938-1026 (Tel)  
<http://www.giat-industries.fr>

**Source**

GIAT Industries NBC Defense

## Operational Parameters

**CW Agents Decontaminated**

GA, GD, VX, HD

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

**Low Hazard TIMs**

Not specified

**Decontaminated**

**Decontaminant Solutions**

Not specified

**Capacity/Throughput**

Decontaminates 10 vehicles per hour

**Set-up Time**

Not specified

# WORKING DRAFT

## **Physical Parameters**

<b>Size</b>	31 x 148 x 23 (ft)
<b>Weight</b>	Not specified
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Anti freeze Water Gas-oil Batteries Decontaminant
<b>Maintenance Repairs Required</b>	Yes (monthly)
<b>Shelf Life</b>	20 yr
<b>Transportability</b>	Not specified
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	14 °F to 120 °F (operating temperature)
<b>Environmental Considerations</b>	No recuperation of effluents
<b>Resources</b>	3 men
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	1 yr

## **Special Requirements**

<b>Operator Skills Required</b>	Hazmat technician or NBC trained personnel
<b>Operator Training Required</b>	5 d of training is required to operate this equipment
<b>Training Available</b>	Yes
<b>Manuals Available</b>	User manual and maintenance manual
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Export license

# WORKING DRAFT

## General

**Equipment Name**

***Mobile Decon Pad***

**ID# 21**



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

No

No

**Application Notes**

The Mobile Decon Pad is designed to decontaminate exterior equipment as well as skin and personal equipment. The Decon Pad is commercially available in the U.S. The Mobile Decon Pad can incorporate an already used decontamination spray technology, or one can be designed along with the pad. Depending on the decontamination solutions utilized, the Mobile Decon Pad may employ one or more of the following technologies: chemical, mechanical, or high-pressure. The pad is portable and is capable of grossly decontaminating people as well as items ranging in size from small hand tools to large military vehicles. The system is fully operational in less than 2 h. The Mobile Decon Pad has been engineered with a stainless steel structure to resist contaminants and chemical agents. Key features of the system include the ability to maintain an exclusion zone and provide for secondary containment. In addition, the mobile system can be moved from site to site to accommodate new requirements and eliminates the need for fixed facilities.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

HazDecon  
810-TW. Alex Bell Rd.  
Dayton, OH 43459  
888-800-3266 (Tel)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs**

Not specified

**Decontaminated**

**Medium Hazard TIMs**

Not specified

**Decontaminated**

# WORKING DRAFT

<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Carbon dioxide
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Less than 2 h

## **Physical Parameters**

<b>Size</b>	45 L x 24 W (ft)
<b>Weight</b>	Not specified
<b>Power Requirements</b>	Not specified

## **Logistical Parameters**

<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Not specified
<b>Durability</b>	The Mobile Decon Pad has been engineered with a stainless steel structure to resist chemical agents.
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

# WORKING DRAFT

## General

**Equipment Name**

**ID# 22**

### *Mobile Laboratories*



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

No

**Equipment**

Yes

**Infrastructure**

No

**Application Notes**

Mobile Laboratories are custom made decontamination laboratories designed to provide decontamination instrumentation, clean rooms, HEPA filtration, deionized water as well as various other features. The laboratories are commercially available in the U.S. and are manufactured by HazDecon Rental & Sales Inc. Many hazardous waste contractors, laboratories, and several companies and organizations in the U.S currently use them. The self-contained systems range in size from 16 ft to 55 ft in length and 8 ft to 12 ft in width. Key features of the mobile laboratories include gas chromatograph and atomic absorption vent systems, refrigerators, slide-out gas cylinder racks (2 bottles), a gas/zero air generator hookup, a complete HVAC system, and a wet chemistry area to include sink and drying rack. In addition, these systems include an acid storage cabinet, a flammable storage cabinet, instrument tie-down tracks, a stainless steel gas manifold system, and a fume hood. Additionally, the mobile laboratory comes with 125 A 240 V electrical service. Finally, all systems are equipped with 204 in of curbside countertop space and 238 in of roadside countertop space. The laboratory has an epoxy floor system, cooler storage, and an optional hot plate, furnace or oven for decontamination crew conveniences.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

HazDecon  
810-TW. Alex Bell Rd.  
Dayton, OH 45459  
888-800-3266 (Tel)

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified

# WORKING DRAFT

<b>High Hazard TIMs Decontaminated</b>	Not specified
<b>Medium Hazard TIMs Decontaminated</b>	Not specified
<b>Low Hazard TIMs Decontaminated</b>	Not specified
<b>Decontaminant Solutions</b>	Carbon dioxide
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	Not specified

## **Physical Parameters**

<b>Size</b>	55 L x 12 W (ft)
<b>Weight</b>	Not specified
<b>Power Requirements</b>	240 V @ 125 A

## **Logistical Parameters**

<b>Consumables Required</b>	Not specified
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Mobile Decontamination Unit
<b>Durability</b>	Not specified
<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified

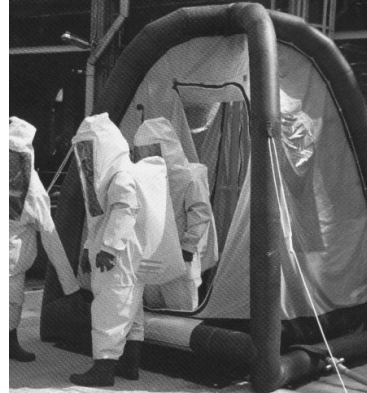
# WORKING DRAFT

## General

**Equipment Name**

***Portaflex CUPOLA Decontamination Shelter***

**ID# 23**



**Decontamination Process**

Physical (removes contaminant) and Chemical (neutralizes contaminant)

**Applications**

**Personnel**

**Equipment**

**Infrastructure**

Yes

No

No

**Application Notes**

The Portaflex CUPOLA is a decontamination shelter used with the Portaflex 300. The CUPOLA is designed to provide containment of contaminated water or decontamination solutions following a decontamination effort. The CUPOLA allows contaminated personnel to walk through from the dirty area to a clean area while undergoing decontamination using the Portaflex 300. The shelter frame incorporates four legs that are inflated under low pressure. An inner lining that has windows on two opposite sides, to enable the decontamination process to be observed, runs across the legs. The openings are fitted with drop down splash flaps to eliminate overspray.

**Availability**

Commercially available

**Current User**

Not specified

**Manufacturer**

Hughes Safety Showers USA  
115 N. Lee St. Suite 502  
Alexandria, VA 22314  
703-836-7486 (Tel)  
703-836-8090 (Fax)  
email: hoyas1@erols.com

**Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## Operational Parameters

**CW Agents Decontaminated**

Not specified

**BW Agents Decontaminated**

Not specified

**High Hazard TIMs  
Decontaminated**

Not specified

**Medium Hazard TIMs  
Decontaminated**

Not specified

# WORKING DRAFT

<b>Low Hazard TIMs</b>	Not specified
<b>Decontaminated</b>	
<b>Decontaminant Solutions</b>	Not specified
<b>Capacity/Throughput</b>	Not specified
<b>Set-up Time</b>	45 s to 60 s

## **Physical Parameters**

<b>Size</b>	Not specified
<b>Weight</b>	99 lb
<b>Power Requirements</b>	None

## **Logistical Parameters**

<b>Consumables Required</b>	None
<b>Maintenance Repairs Required</b>	Not specified
<b>Shelf Life</b>	Not specified
<b>Transportability</b>	Portable Decontamination Unit
<b>Durability</b>	Information not available
<b>Environmental Conditions</b>	None
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Not specified
<b>Operator Training Required</b>	Not specified
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Portaflex 300 Decontamination Showers
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified



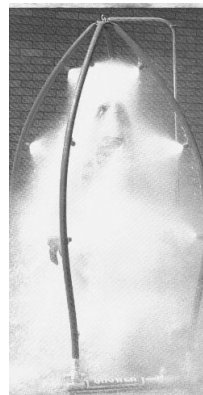
# WORKING DRAFT

## General

**Equipment Name**

**ID# 24**

***Portaflex Decontamination Shower Series***



**Decontamination Process**

Physical (removes contaminant)

**Applications**

**Personnel**

Yes

**Equipment**

No

**Infrastructure**

No

**Application Notes**

The Portaflex Decontamination Showers are a series of decontamination showers used to wash skin and personal equipment. The Portaflex Decontamination Showers are manufactured in the U.S. by Hughes Safety Showers. The system primarily employs mechanical technology. The series is comprised of four different showers, the Portaflex 75, 200, 300, and 500. The showers vary only in size and weight. The Portaflex 75 is the smallest of the shower series. The shower unit is a compact unit and is only to be used until a major, full-size unit is available. The Portaflex 75 is made of a heavy-duty stainless steel pipe work base. It is equipped with a 1.5 in Durline flexible hose with six spray nozzles that disperses water on all sides of the contaminated individual. The Portaflex 75 can be set up in 30 s. The Portaflex 200 is a full size decontamination shower weighing 29.5 kg and is 128 cm long, 52 cm wide, and 17 cm high. The shower base is made from stainless steel pipe work and can also be set up in 30 s. The Portaflex 300 is also a full size decontamination shower. It weighs 25 kg and is 77 cm long, 50 cm wide, and 19 cm high. The shower is made up of four 0.5 in (38 mm) lay-flat Duraline hoses, that form four shower legs. Each leg is fitted with four spray nozzles. When under pressure, the hose legs and the base frame assembly become rigid, thus forming a stable frame for the decontamination of personnel. The system can be assembled in 45 s and can be easily transported in a carrying case that doubles as the base platform of the shower unit. The Portaflex 500 is a multi-personnel decontamination shower module. It weighs 85 kg and is 140 cm long, 40 cm wide, and 49 cm high. The system is designed to provide the decontamination of mass casualties. The Portaflex 500 is comprised of 5 separate shower modules that are inter-connected. The system can also come equipped with screens for privacy. The entire system can be assembled in less than 5 min.

**Availability**

Commercially available

# WORKING DRAFT

## **Current User**

The Portaflex 500 is a multi-personnel decontamination shower module. It weighs 85 kg and is 140 cm long, 40 cm wide, and 49 cm high. The system is designed to provide the decontamination of mass casualties. The Portaflex 500 is comprised of five separate shower modules that are inter-connected. The system can also come equipped with screens for privacy. The entire system can be assembled in less than 5 min.

## **Manufacturer**

Hughes Safety Showers USA  
115 N. Lee St. Suite 502  
Alexandria, VA 22314  
703-836-7486 (Tel)  
703-836-8090 (Fax)  
email: hoyas1@erols.com

## **Source**

Wide Area Decon: CB Decontamination Technologies, Equipment, and Projects, 22 March 1999 (U.S. Joint Service Material Group)

## **Operational Parameters**

### **CW Agents Decontaminated**

GB, VX, HD

### **BW Agents Decontaminated**

All

### **High Hazard TIMs Decontaminated**

Not specified

### **Medium Hazard TIMs Decontaminated**

Not specified

### **Low Hazard TIMs Decontaminated**

Not specified

### **Decontaminant Solutions**

Water

### **Capacity/Throughput**

Not specified

### **Set-up Time**

30 s to 5 min

## **Physical Parameters**

### **Size**

Portaflex 75 - 3.41 x 2.50 x 0.52 (ft)  
Portaflex 200 - 4.20 x 1.70 x 0.55 (ft)  
Portaflex 300 - 2.52 x 1.64 x 0.62 (ft)  
Portaflex 500 - 4.60 x 1.31 x 1.60 (ft)

### **Weight**

75 lb to 37.4 lb  
200 lb to 64.9 lb  
300 lb to 55 lb  
500 lb to 187 lb

### **Power Requirements**

Not specified

## **Logistical Parameters**

### **Consumables Required**

Decontaminant

### **Maintenance Repairs Required**

Not specified

### **Shelf Life**

Not specified

### **Transportability**

Portable Decontamination Unit

### **Durability**

Not specified

# WORKING DRAFT

<b>Environmental Conditions</b>	Not specified
<b>Environmental Considerations</b>	Not specified
<b>Resources</b>	Not specified
<b>Unit Cost</b>	Not specified
<b>Maintenance Cost</b>	Not specified
<b>Warranty</b>	Not specified

## **Special Requirements**

<b>Operator Skills Required</b>	Minimal
<b>Operator Training Required</b>	Minimal
<b>Training Available</b>	Not specified
<b>Manuals Available</b>	Not specified
<b>Support Equipment</b>	Not specified
<b>Testing Information</b>	Information not available
<b>Applicable Regulations</b>	Not specified